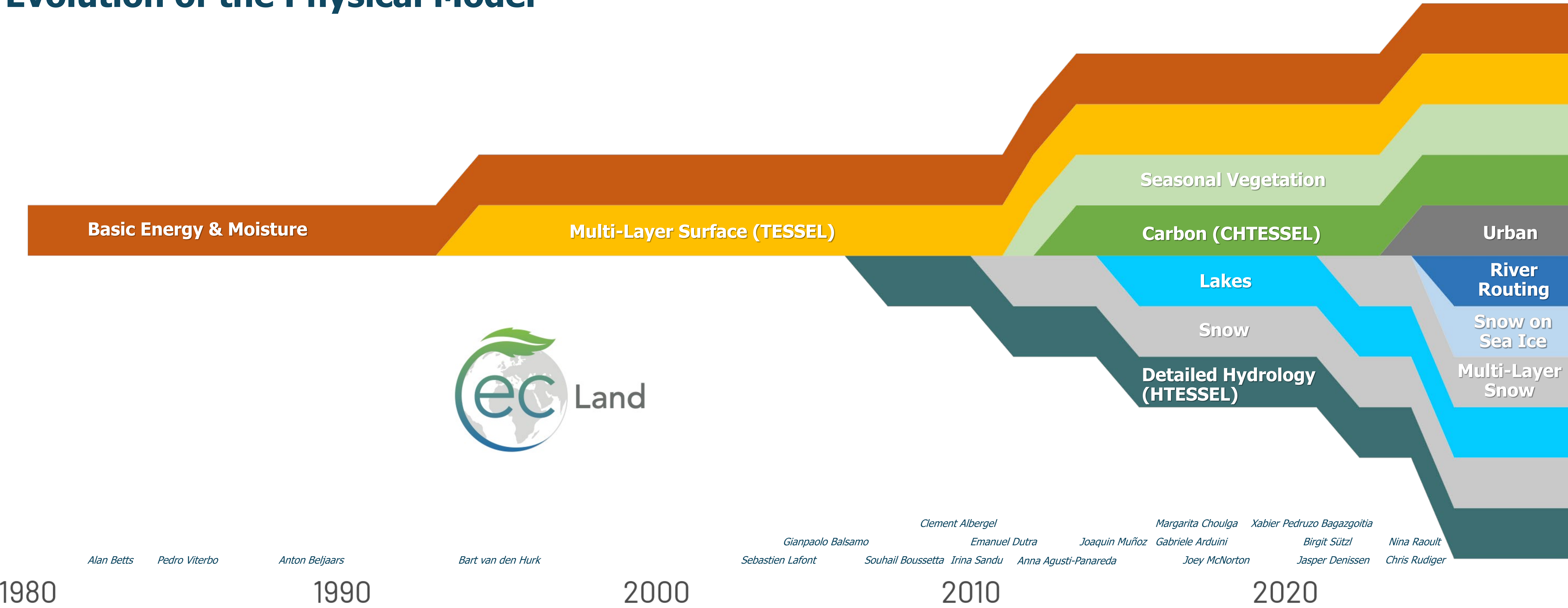


# 50 Years of Land Modelling at ECMWF for Scientific and Societal Benefit

Joey McNorton, Souhail Boussetta & The Land Team



## Evolution of the Physical Model



## Into The Future

Spatialised Parameters  
Time-Varying Land Cover

Coupled Carbon-Hydrology  
Dynamic Vegetation  
Vegetation Disturbance/ Recovery

Spatial Urban Properties  
Residential Emissions

Snow on Glaciers

Irrigation  
Two-Way Flood Coupling  
Dynamic Lakes

## Destination Earth

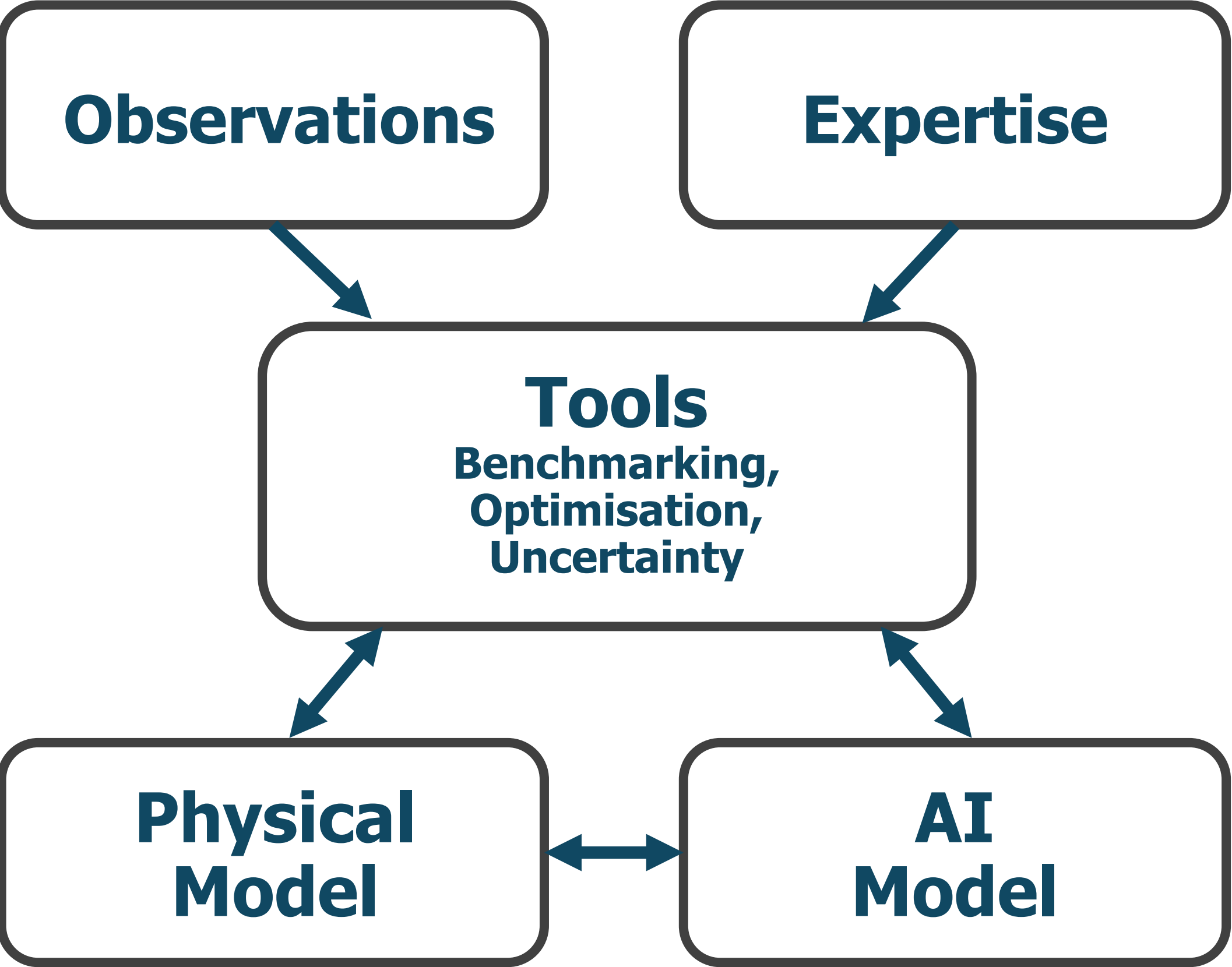
Atmosphere Monitoring Service  
atmosphere.copernicus.eu

Climate Change Service  
climate.copernicus.eu

Emergency Management

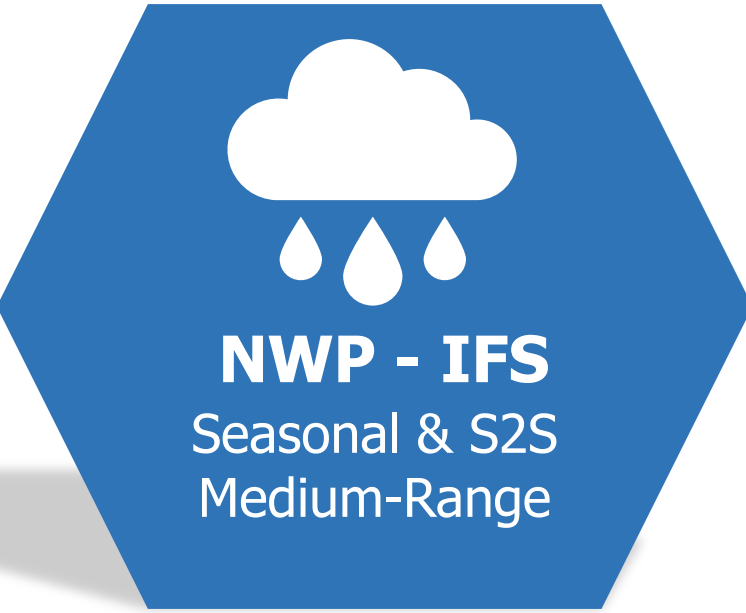
Datasets

## Development Paradigm

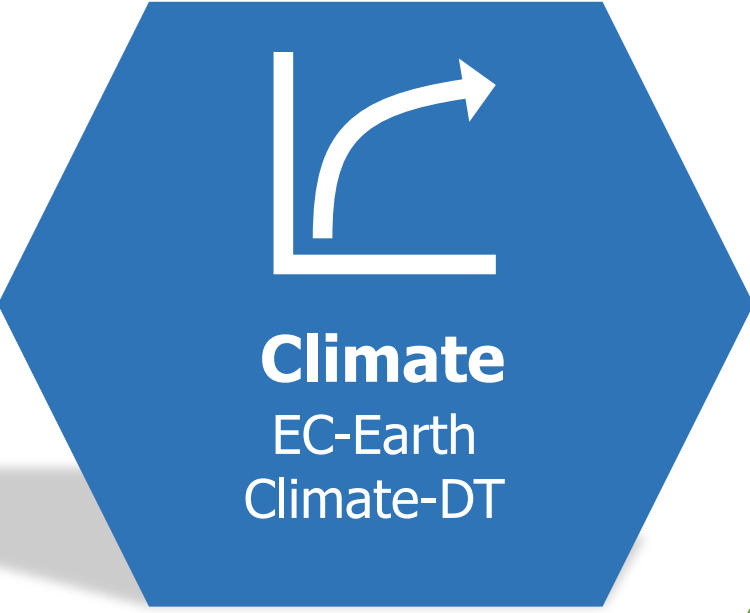


## Applications

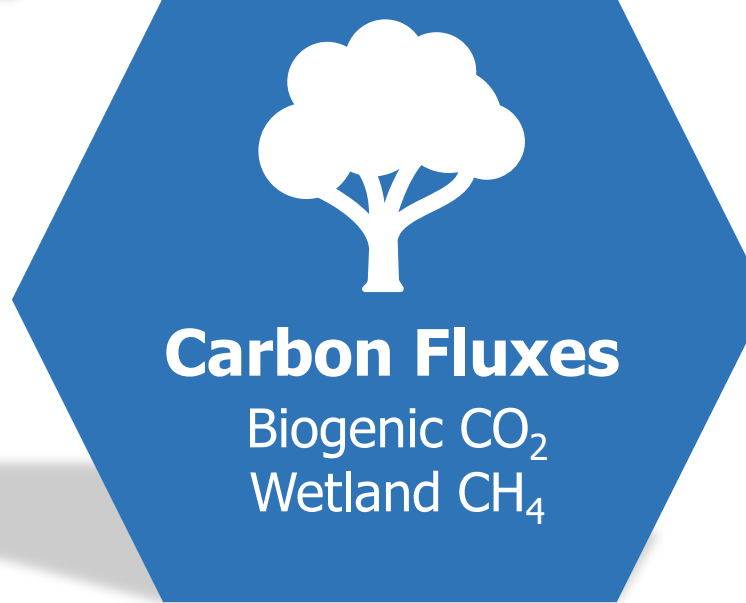
### Weather & Climate



NWP - IFS  
Seasonal & S2S  
Medium-Range



Climate  
EC-Earth  
Climate-DT



Carbon Fluxes  
Biogenic CO<sub>2</sub>  
Wetland CH<sub>4</sub>

### Environment



Wildfires  
FWI  
Sparky-PoF



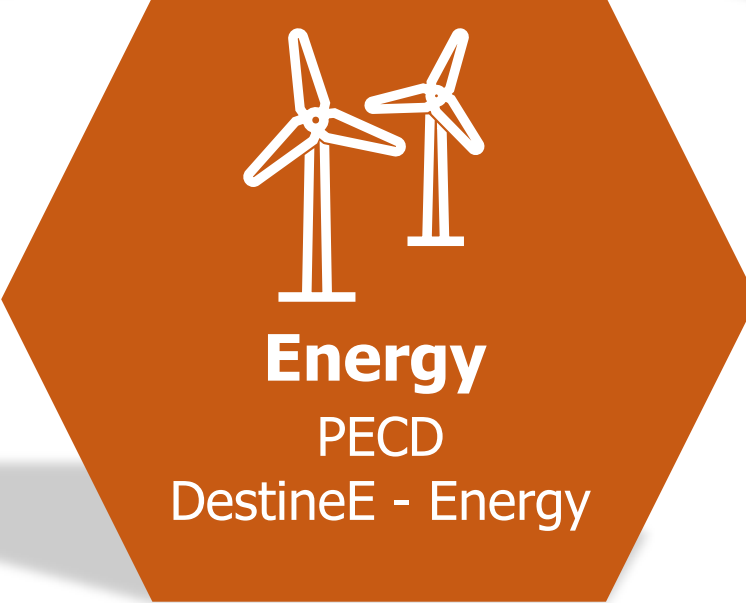
Drought  
ERA5-Drought



Floods  
EFAS  
GloFAS



Agriculture  
AgERA5  
CYMFS



Energy  
PECD  
DestineE - Energy

### Society



Comfort  
UTCI  
Thermal Trace



Air Quality  
MEHNDI  
EAC4